

Date	3-1-2013
Concept/ Objective	<u>APCALCULUSBC</u> 1. Master the Essential 5 listed for AB Calculus exam 2. Understand how to extend AB Calculus concepts to more advanced situations, including <ul style="list-style-type: none"> ❖ Using L'Hopital's rule to find limited of indeterminate forms ❖ Using limits to analyze improper integrals ❖ Solving logistic differential equations and estimating solutions using Euler's method ❖ Finding antiderivatives using integration by parts or partial fractions ❖ Finding arc lengths 3. Be able to apply calculus concepts to parametrically defined functions and polar functions 4. Know how to analyze the position, velocity, speed, acceleration, and distance travelled for an object in motion in two dimensions by applying calculus concepts to vectors 5. Understand infinite series <ul style="list-style-type: none"> ❖ Determine whether a series converges or diverges ❖ Use Taylor's theorem to represent functions as power series ❖ Determine the interval of convergence for a power series ❖ Find bounds on the error for estimates based on series
In this class we will	10 minutes Homework Review 50 minutes Discuss current or new topic/Guided Practice 20 minutes Independent Practice 10 minutes Exit Ticket
Lesson Plan	<ul style="list-style-type: none"> • Review the general properties of functions, domain, range, composition, inverses; Special functions: absolute value, greatest integer; polynomial, rational, trigonometric, exponential and logarithmic • Differentiation – Review derivatives as instantaneous rates of change; • Estimating derivatives using graphs and tables • Derivatives of basic functions • The product, the quotient and chain rules • Implicit differentiation • Derivatives of inverse functions • Rolle's Theorem and the Mean Value Theorem • Derivatives of parametrically defined functions • L'Hopital's Rule for evaluating limits of indeterminate functions
	Guided and Independent Practice from Barron's AP Calculus BC Page 67-79; Practice Page 80-83 Go back and review extremas, local and global extremas
Homework	
Exit Ticket	
Previous Knowledge	<u>AP Calculus AB</u> 1. Learn the basic facts <ul style="list-style-type: none"> ❖ Derivatives and antiderivatives of common functions ❖ The product, quotient, and chain rules for finding derivatives ❖ The midpoint, left and right rectangle and trapezoid rules for estimating definite integrals ❖ The important theorems: Rolle's theorem, the mean value theorem, and especially the fundamental theorem of calculus 2. Understand that a derivative is an instantaneous rate of change, and be able to apply that concept to <ul style="list-style-type: none"> ❖ Find equations of tangent lines ❖ Determine where a function is increasing/decreasing, concave up/down, or has maxima, minima, or points of inflection ❖ Analyze the speed, velocity, and acceleration of an object in motion

	<ul style="list-style-type: none"> ❖ Solve related rates problems, using implicit differentiation when necessary <p>3. Understand that integrals represent accumulation functions based on antiderivatives, and be able to apply those concepts to</p> <ul style="list-style-type: none"> ❖ The average value of a function ❖ Area and volume ❖ Position of objection in motion and distance travelled ❖ Total amount when given the rate of accumulation ❖ Differential equations, including solutions and slope fields <p>4. Be able to apply any of the above calculus concepts to functions defined algebraically, graphically, or in tables</p> <p>5. Be able to maximize your score on the exam by</p> <ul style="list-style-type: none"> ❖ Answering ALL the multiple-choice questions ❖ Knowing how and when to use your calculator, and when not to ❖ Understanding what work you need to show ❖ Knowing how to explain, interpret, and justify answers when a question requires that
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